1. A process for producing formed cellulosic articles, such as fibres, filaments, sheetings, membranes or tubes, comprising

a) extruding a solution of cellulose in an aqueous amine oxide, particularly N-methylmorpholine N-oxide, through an extrusion die via an air gap and coagulating the formed article in an aqueous precipitation bath containing amine oxide, and

b) passing the formed article through at least one washing stage for removing residual amine oxide,

characterized in that the liquor of the precipitation bath in the precipitation stage and/or the washing liquor of the washing stage(s) is treated with ultra-violet radiation.

2. The process according to claim 1 wherein the ultra-violet radiation has a wave length in the range from 200 to 280 nm.

3. The process according to claim 2 wherein the ultra-violet radiation has a wave length of 254 nm.

4. The process according to claim 2 wherein the ultra-violet radiation is generated by a mercury low-pressure lamp.

5. The process according to claim 2 wherein the UV treatment is limited to the liquors of the washing stage(s) having a temperature below 50^0C.

6. The process according to claim 1 wherein precipitation bath liquors or washing liquors having a Hazen color number Hz $\leq$ 400 is subjected to the UV treatment.

7. The process according to claim 1 wherein the precipitation bath and several washing stages are connected in series and have liquor cycles of their own, characterized in that the cycle

liquors of the precipitation bath and the first washing stage(s) are treated with ultra-violet radiation.

8. The process according to claim 6 characterized in that the cycle liquors are irradiated with a power in the range from 0.1 to 1.0 Wh/l.

9. A system for reducing unwanted microorganisms in liquors containing amine oxide, comprising:
a precipitation bath; and
a series of washing stages communicatively connected to each other and the precipitation bath wherein the precipitation bath and at least one of the washing stages comprise a UV radiation source positioned for irradiating the washing liquor therein with ultra-violet radiation to reduce unwanted microorganisms in the washing liquor.

10. The system according to claim 9 wherein the ultra-violet radiation has a wave length in the range from 200 to 280 nm.

11. The system according to claim 9 wherein the ultra-violet radiation has a wave length of 254 nm.

12. The system according to claim 9 wherein the ultra-violet radiation is generated by a mercury low-pressure lamp.

13. The system according to claim 9 wherein the irradiation treatment is limited to the liquors of the washing stage(s) having a temperature below 50^0C.

14. The system according to claim 9 wherein liquors in the precipitation and/or washing stages having a Hazen color number Hz $\leq$ 400 is subjected to the UV treatment.

15. A method for reducing unwanted microorganisms in washing liquors containing amine oxide, comprising:

irradiating washing liquor containing a N-methylmorpholine N-oxide in at least one washing stage with ultra-violet radiation in a sufficient amount to effectively reduce unwanted microorganisms therein, the ultra-violet radiation having a wave length in the range from 200 to 280 nm.

The invention relates to a process for producing formed cellulosic articles, such as fibres, filaments, sheetings, membranes or tubes, comprising a) extruding a solution of cellulose in an aqueous amine oxide, particularly N-methylmorpholine N-oxide, through an extrusion die via an air gap and coagulating the formed article in an aqueous precipitation bath containing amine oxide, and b) passing the formed article through at least one washing stage for removing residual amine oxide.

While the precipitation bath usually has concentrations of N-methylmorpholine N-oxide (NMMO) from 10 to 25 % by mass and temperatures from 0 to 20°C, in the subsequent washing stages the NMMO content of the washing liquors is decreased to nearly 0 % at temperatures up to 80°C. It is known that these NMMO-containing liquors are characterized by a partially very strong growth of microorganisms. These biological substances are sustantially bacteria and fungi and cause considerable difficulties with the processing by the formation of slime aggregates and biofilms. The function of parts of the production plant can be impaired by clogging of pipes, filters, pumps etc. up to their total breakdown. A mechanical cleaning of the washing and precipitation bath systems is very expensive due to the marked adhesion of the polymeric slime substances to all the surfaces and results in unwanted interruptions of the production process.

From WO 96/18761 a process is known in which the biological substances in the baths are degraded by using usual oxidants, such as e.g. hydrogen peroxide, peracetic acid, ozone or chlorine